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I. Introduction

Work has a central role in many people's lives and therefore is one important factor affecting their level of well-being. Many researchers, inspired by Andrew Clark's extensive work on the topic, have tried to explain job satisfaction with objective working conditions (income, working hours, etc). More recently, there has been a growing interest in understanding how intangible job characteristics (autonomy, prestige, stress, etc) affect job satisfaction.

The effect of the occupational choice has however received far less attention. Yet, as one climbs the ladder of occupations (from elementary positions, to workers and professionals until senior officials and managers, using the ISCO-88 classification) the self-reported levels of general happiness and job satisfaction tend to increase. Based on raw figures, Smith (20007) shows that in US the occupations with the least happy people are manual and service positions, for which little skills are necessary. The same pattern is distilled from the data of the European Social Survey 2006/2007. Those preliminary findings motivate the current study. Indeed we aim to understand what drives such variations of job satisfaction across occupations.

In order to answer to the research question, we adopt a stepwise approach and test whether the differences across occupation in the level of self-reported job satisfaction are due to confounding factors lying at the individual, household and job levels or the effect of the occupation as such. Among the variables used in the analysis, we are particularly interested in the effect of autonomy, supervisory tasks, influence in decision-making and opportunities to learn on job satisfaction. Those unconventional job related variables are rarely considered in the literature and could in large part explain cross occupation variations in job satisfaction.

The main data used in the paper are drawn from the 2006/2007 European Social Survey (henceforth ESS3), a cross-country survey which was administered on a nationally representative sample of 25 countries. The data provides information on the socio-economic characteristics of the respondents, including relevant job-related variables (which can proxy the level of autonomy, risk, responsibility, participation in decision-making processes, satisfaction with wage, working hours, etc). In addition, one specific module explores both personal and inter-personal aspects of well-being (Huppert et al., 2009). We check the robustness of our main findings with data from an alternative source, the European Working Conditions Survey (henceforth EWCS). This survey, which focuses on quality of work, covers in detail all aspects of working conditions: career and employment security (employment status, income, worker's rights, etc), health and well-being (risk exposure, health problems, work organization), skills development and work-life balance. While the ESS3 just measures household income, EWCS allows us to control for the income level of individuals.

The outcome of this empirical study is the following: when the effect of other variables is not accounted for, being a Manager yields a satisfaction premium twice as big that

provided by Workers positions. This substantial satisfaction gap between those holding Managerial positions and Workers practically disappears when we control for individual, household and work related variables. It is important to note that, even though the differences across occupations are reduced, all occupations bring about more job satisfaction than manual and services positions. All results still hold when using an alternative data set (the EWCS). They are also robust to alternative estimation procedures.

The rest of the paper is organized as follows: section 2 briefly reviews the literature on job satisfaction; section 3 describes the datasets used in the analysis; section 4 presents the methodology and results. Section 5 discusses the empirical findings; section 6 concludes.

II. Literature Review

The economic literature on job satisfaction comes from two areas of research. On the one hand, welfare economists interested in the analysis of happiness consider job satisfaction as a domain-specific measure of subjective well-being (Van Praag et al., 2003; Warr, 1999). Originally a matter in the realm of psychology (Kahneman et al., 2003; Seligman, 2002; Diener, 1984) the study of well-being has attracted the attention of many economists in recent years (to name just a few Easterlin, 1995; Clark &Oswald, 1994; Frey & Stutzer, 2000; Layard, 2005). In the psychologists' tradition, the analysis of life satisfaction[1] can be approached from three angles: assessing objective conditions (for example, actual superiors' feedback), focusing on perceptions[2] (i.e. worker feels that his performance is recognized) or studying the match between aspirations and attainment (worker feels as much appreciated as he expects to be). In addition, the overall evaluation (for example, job satisfaction) can differ from contentment with specific features (i.e. working conditions, responsibility, etc…). In any case, the subjective nature of happiness makes it difficult to compare and add individual well-being levels. The scarcity of detailed data has been a significant obstacle to the measurement of well-being. In the wake of the growing interest in the subject, a number of comprehensive questionnaire modules have been included in national and international surveys. This is the case of the GSS (prepared by the US National Opinion Research Center) and in Europe, the 2005 ESS module on Personal & Social Well-being.

Happiness is commonly defined either as pleasure attainment (hedonic approach) or as the degree to which a person is fully functioning (eudaimonic approach, Ryan & Deci, 2001). As work is one of the domains at which individuals try to fulfil their potential,

[1] Dolan et al. (2008) grouped the determinants of happiness covered in the literature as follows: personal characteristics (gender, age, personality, etc…), social (education, health, type of job, unemployment, etc…), income, how we spend our time (work/life balance, volunteering, etc…) , attitudes and beliefs towards self/others/life (confidence, religion, etc..), relationships (marriage, having children), environment, economic, social, political determinants (inequality, institutions, safety, urbanization, etc…).

[2] Furthermore, Kahneman and Krueger (2006) suggested that perceptions of (recent) experiences are a better measure of subjective well-being that the individual responses to standard, evaluative, questions.

many researchers have turned their attention to the study of satisfaction with this aspect of life. To start with, having a job already appears to make a difference. In effect, there is now enough evidence that the unemployed are less happy than those in jobs (Clark & Oswald, 1994; Winkelmann & Winkelmann, 1998). Employment is also the most common source of revenue. The effect of the income on well-being is a subject of much controversy since Easterlin first enunciated its famous paradox (Easterlin, 1974; Easterlin, 1995; Easterlin, 2001; Frijters et al., 2004).

On the other hand, within the sphere of labour economics, researchers regard job satisfaction as a good indicator of worker's general evaluation of working conditions. Although subjective, it is used in the literature (Freeman, 1978; Clark, 2004, Akerlof et al., 1988) as an explanatory variable of workers' behavior (i.e. productivity, quits, early retirement, etc). The main sources of information of this type of studies are labor surveys, surveys combining both employers' and employees' data and administrative information addressing elements of quality of work.

Whether concerned with the well-being or with the performance of workers, when studying job satisfaction economists tend to focus on the determinants of such satisfaction. These determinants are often grouped into individual characteristics and job-related factors. Concerning individual characteristics, there is some evidence that age (Clark et al., 1996; Sloane & Ward, 2001; Blanchflower & Oswald, 1999), gender (Clark, 1997; Sousa-Poza & Sousa-Poza, 2000), marital status (Clark, 1997; Sousa-Poza & Sousa-Poza, 2000) education (Clark & Oswald, 1996; Hamermesh, 2001) and health condition (Clark et al., 1996)[3] have significant effects on job satisfaction. The job related characteristics influencing job satisfaction can be grouped into conventional features and unconventional, intangible or unobserved elements. The first group of variables has been extensively used in the literature. They include objective working conditions such as wage, hours worked, income comparison (Clark & Oswald, 1996), exposure to risks, sector (Gazioglu & Tansel, 2006) and union status (Borjas, 1979; Bryson et al., 2004). In contrast, the effect of intangible job characteristics such as opportunities to learn (Gazioglu & Tansel, 2006), autonomy (Bradley et al., 2003), supervisory role (Blanchflower & Oswald, 1999), participation in decision-making processes, prestige, trust (Helliwell & Huang, 2008) have started to receive attention much later.

The impact of the choice of the occupation on the level of well-being at work is another aspect neglected by researchers. Based on raw figures, Smith (2007) shows that in US the occupations with the least happy people are manual and service positions, for which little skills are necessary. On the other end, the happiest people have professions involving helping others, technical and scientific expertise and creativity. A number of papers has analyzed the level and determinants of life and job satisfaction for specific occupations (Hedley, 1981; Gavin & Kelley, 1978; Sloane & Ward, 2001; Shields & Price, 2002). However, to the best of our knowledge, there are no attempts to explain the variations in the level of job satisfaction across occupations. We aim to contribute to this branch of the

[3] The opposite relationship (that is, the effect of job satisfaction on self-reported measures of health) has been analyzed at length by health scientist and organizational psychologists (Faragher et al., 2005) before economists (Fischer & Sousa-Poza, 2009).

literature by analysing first whether the occupation held by the respondents affect their level of job satisfaction and second, the reasons underlying those cross-occupation variations.

III. Data

The data used in the paper is drawn from the 2006/2007 *European Social Survey* (ESS3) covering 25 countries (total sample size 37044). The ESS is funded jointly by the European Commission, the European Science Foundation and academic funding bodies in each participating country. Data collection takes place every two years, by means of face to face interviews[4]. The questionnaire consists in a core module that is repeated in all rounds plus two rotating modules in each round. The core module contains questions on health and well-being as well as detailed information on socio-economic characteristics of the respondent and her household. In particular, it contains information on household composition, sex, age, education of respondent and partner, income, marital status. It includes a wide range of job-related questions such as past unemployment experience, type of contract, establishment size, sector, occupation of respondent and partner, hours worked, union membership or even the degree of influence, autonomy or responsibility that the respondent enjoys at work.

In 2005 the ESS3 included a rotating module on Personal and Social Well-Being which reflects the most recent theoretical developments on the analysis of happiness. It incorporates questions about how the respondent feels but also how does he functions (i.e. sense of autonomy, competence, interest, etc), not only at personal level, but also at inter-personal or social level. In addition, the module includes general evaluative questions as well as more specific questions about recent events (i.e what happened in the last seven days). The module assesses the individual feelings and functioning within and across domains. In particular, it explores job satisfaction as well as positive and negative affect at work.

In our analysis we also use data from the *European Working Condition Survey* (EWCS) (EFILWC, 2007; Parent-Thirion et al., 2007). The EWCS is a cross-country survey conducted by the European Foundation for the Improvement of Living and Working Conditions (EFILWC) once every five years[5]. In 2005 the survey included 31 countries (the 27 current EU member states plus Croatia, Turkey, Switzerland and Norway). The survey is based on a questionnaire which is administered face-to-face to a random sample of "persons in employment" (i.e. employees and the self-employed), representative of the working population in each EU country (aged 15 years and over). Retired and unemployed persons, housewives and students, etc., were excluded. The total sample size is 29,680. The questionnaire covers individual and job characteristics (i.e. age, living with partner, occupation, working time, size of firm, etc…). The EWCS also explores job satisfaction, as a proxy for a general assessment of quality of work. More importantly, the questionnaire covers in detail all aspects of working conditions: career and employment

[4] The first round was in 2002/2003, the second round in 2004/2005 and the third one in 2005/2006. The ESS3 rotating modules: Personal & Social Well-being; The Timing of Life.
[5] The EWCS series began in 1990-1991.

security (employment status, income, worker's rights, etc), health and well-being (risk exposure, health problems, work organization), skills development and work-life balance.

The ESS3 and the EWCS were conducted for very different purposes: the former seeks to explore well-being across life domains whereas the latter focuses on quality of work and employment. Interestingly enough, the ESS3 and the EWCS share, however, many useful features. In effect, these two surveys have the same geographical and time coverage (most European countries, year 2005). Both surveys report the occupation and job satisfaction of adults in employment. The same control variables at individual, household and job level can be measured using either survey[6]. Because of these similarities, we employ the EWCS to check the robustness of the conclusions obtained using ESS3 data. The ESS3 remains however the main dataset for the present study because it reports the general level of happiness, as well as detailed information on domain-specific aspects of individual well-being.

IV. Methodology

IV.1 Econometric framework

We explore the impact of occupation on job satisfaction using the following econometric framework:

$$Y_i = X_i\beta + \sum_{j=1}^{J} Occ_j\delta_j + \varepsilon_i \qquad (1)$$

where Y_i is the level of subjective job satisfaction of individual i, X_i is a set of observable individual covariates, Occ_j is a set of occupational dummy variables and ε_i is the error term.

Because the focus of our study is to evaluate whether occupation has an effect on job satisfaction, we include only individuals aged between 18 and 65. In the case of the ESS we have selected the respondents who report being in paid work in the 7 days prior to the interview. All EWCS respondents are persons in employment. Final sample size is 10294 for the ESS and 9390 for the EWCS. We use data from the 18 countries for which there is information on the complete set of variables included in the analysis in both the ESS and the EWCS: Belgium, Bulgaria, Cyprus, Denmark, Estonia, Finland, France, Germany, Hungary, Norway, Poland, Portugal, Slovenia, Slovakia, Spain, Sweden, Switzerland, and the United Kingdom.

[6] In some cases, however, one of the datasets offers a better proxy for the concept under analysis. As for example, the ESS inquires about household income, whereas the EWCS incorporates data on individual earnings. One expects the latter measure of income to be more correlated with job satisfaction and personal well-being that the former.

The dependent variable is self-reported job satisfaction. This variable is coded in the ESS on an eleven-point scale running from "extremely dissatisfied" to "extremely satisfied". The EWCS uses a four-point scale running from "not at all satisfied" to "very satisfied". The mean of job satisfaction in the ESS sample is 7.21 (standard deviation 2.01). The Nordic countries are all above that mean, with Denmark scoring the highest level of job satisfaction in the sample (7.8). Most Southern and Eastern Europe countries achieve low levels of job satisfaction, with Bulgaria at the bottom end of the rank (average job satisfaction 6.586). Great Britain, France and Germany attain job satisfaction levels of about 7.

The set of control variables, X_i includes individual and household covariates as well as conventional and unconventional job-related characteristics. Country dummies are also introduced in all specifications. Appendix Table A1 provides detailed information on the explanatory variables used to estimate equation (1) both in the ESS sample and in the EWCS sample. Appendix Table A2 reports descriptive statistics for the ESS sample, by country.

The main variables of interest are the set of five occupational dummies. To determine the respondent's occupation, the ESS includes three questions (title, description of job and qualifications required)[7]. This information is used to create a post-coded variable that follows the ILO's ISCO88 classification, at four digits. We have grouped occupations into 5 groups[8]: Senior Officials or Managers (henceforth Managers), Professionals, Technicians, Workers and Elementary Occupations (or Labourers). The ISCO standards classifies jobs according to (the complexity of) the tasks and duties undertaken in the job. At major group level, it does not differentiate between sectors of activity[9].

Table 1 below shows the distribution of occupations in the samples. Workers represent by far the largest group (they account for 46% of the ESS sample and 48% of the EWCS sample), followed by Technicians (around 20% in both samples) and Professionals (18% in ESS and 15% in EWCS). The percentage of respondents performing manual or service tasks is just 8% in the ESS sample but rises to 13% in the EWCS sample. Appendix Table A2 shows the distribution of occupations for each country[10]. The Northern and richer countries tend to have more persons in employment at the upper level of the occupation ladder than the Southern or Eastern countries.

Table 1 shows the mean job satisfaction by occupation, for both the ESS sample and the EWCS sample. Respondents with higher occupational level tend to report higher job

[7] The size of the firm and sector of activity are also taken into account for the post-coding of the respondent's occupation (ref: ESS 2006 Data Protocol Edition 1.4, August 2006)

[8] Occupations were first grouped at the level of the ten ISCO major groups (one digit). After excluding Armed forces, groups 4 to 8 (Clerks, Service workers, Agricultural and fishery workers, Trade workers, Machine Operators) were further clustered into one category: Workers.

[9] For instance, the sub-major group 21 is "Physical, Mathematical and Engineering Science Professionals", whereas the sub-major 24 refers to "Legal and Business Professionals". However, these two types of professionals are confounded at major level 2.

[10] Numbers under column "Mean" show the frequency of each occupation (summing up to 1).

satisfaction. All means are crowed together in the upper level of the satisfaction scale. The difference between the highest and the lowest mean job satisfaction is 1.13 points (10%) for the ESS and 0,30 points (6%) for the EWCS. In particular, the satisfaction gap between Managers and Workers amounts to just 5% in both cases. Table 1 displays the test statistics for mean differences across occupations. Using data from the ESS, all means appear to be statistically different from each other, except for the case of Managers against Professionals, suggesting that these two groups may be statistically similar. In the EWCS case, we also observe significant differences across occupations in job satisfaction except for the pairs Managers/Professionals Managers/Technicians and Professional/Technicians.

Table 1: Mean Job Satisfaction by Occupation

ESS — How satisfied are you with your present job, all things considered? (range 0-10)

Occupation (ISCO 88)	Mean	Std.Dev	Freq.
Senior Officials and Managers	7.650	1.728	812
Professionals	7.566	1.722	1819
Technicians	7.308	1.866	2090
Workers	7.068	2.102	4756
Elementary Occupations	6.517	2.387	817
Total	7.207	2.011	10294

diff = mean(Senior O) - mean(Professi)	Pr(|T| > |t|) = 0.2452
diff = mean(Senior O) - mean(Technici)	Pr(|T| > |t|) = 0.0000
diff = mean(Senior O) - mean(Workers)	Pr(|T| > |t|) = 0.0000
diff = mean(Senior O) - mean(Elementa)	Pr(|T| > |t|) = 0.0000
diff = mean(Professi) - mean(Technici)	Pr(|T| > |t|) = 0.0000
diff = mean(Professi) - mean(Workers)	Pr(|T| > |t|) = 0.0000
diff = mean(Professi) - mean(Elementa)	Pr(|T| > |t|) = 0.0000
diff = mean(Technici) - mean(Workers)	Pr(|T| > |t|) = 0.0000
diff = mean(Technici) - mean(Elementa)	Pr(|T| > |t|) = 0.0000
diff = mean(Workers) - mean(Elementa)	Pr(|T| > |t|) = 0.0000

Source: European Social Survey, 2006/7

EWCS — How satisfied are you with working conditions in your main paid job? (range 1-4)

Occupation (ISCO 88)	Mean	Std.Dev	Freq.
Senior Officials and Managers	3.199	0.708	487
Professionals	3.149	0.662	1387
Technicians	3.169	0.679	1798
Workers	2.995	0.727	4477
Elementary Occupations	2.906	0.715	1241
Total	3.050	0.713	9390

diff = mean(Senior O) - mean(Professi)	Pr(|T| > |t|) = 0.1539
diff = mean(Senior O) - mean(Technici)	Pr(|T| > |t|) = 0.3811
diff = mean(Senior O) - mean(Workers)	Pr(|T| > |t|) = 0.0000
diff = mean(Senior O) - mean(Elementa)	Pr(|T| > |t|) = 0.0000
diff = mean(Professi) - mean(Technici)	Pr(|T| > |t|) = 0.4047
diff = mean(Professi) - mean(Workers)	Pr(|T| > |t|) = 0.0000
diff = mean(Professi) - mean(Elementa)	Pr(|T| > |t|) = 0.0000
diff = mean(Technici) - mean(Workers)	Pr(|T| > |t|) = 0.0000
diff = mean(Technici) - mean(Elementa)	Pr(|T| > |t|) = 0.0000
diff = mean(Workers) - mean(Elementa)	Pr(|T| > |t|) = 0.0001

Source: European Working Conditions Survey, 2005

Having observed that the mean job satisfaction of Managers and Professionals appear not to be statistically different from each other, we group together these two categories under a new category labeled “Senior Officials, Managers and Professionals”. Table 2 shows the distribution of occupations in the sample and the test statistics for mean differences.

Table 2: Mean Job Satisfaction by Occupation (four occupational categories)

ESS

How satisfied are you with your present job, all things considered? (range 0-10)

Occupation (ISCO 88)	Mean	Std.Dev	Freq.
Senior Officials Managers Professionals	7.592	1.724	2631
Technicians	7.308	1.866	2090
Workers	7.068	2.102	4756
Elementary Occupations	6.517	2.387	817
Total	7.207	2.011	10294

diff = mean(Senior O) - mean(Technici)	Pr(|T| > |t|) = 0.0000
diff = mean(Senior O) - mean(Workers)	Pr(|T| > |t|) = 0.0000
diff = mean(Senior O) - mean(Elementa)	Pr(|T| > |t|) = 0.0000
diff = mean(Technici) - mean(Workers)	Pr(|T| > |t|) = 0.0000
diff = mean(Technici) - mean(Elementa)	Pr(|T| > |t|) = 0.0000
diff = mean(Workers) - mean(Elementa)	Pr(|T| > |t|) = 0.0000

Source: European Social Survey, 2006/7

EWCS

How satisfied are you with working conditions in your main paid job? (range 1-4)

Occupation (ISCO 88)	Mean	Std.Dev	Freq.
Senior Officials Managers Professionals	3.162	0.674	1874
Technicians	3.169	0.679	1798
Workers	2.995	0.727	4477
Elementary Occupations	2.906	0.715	1241
Total	3.050	0.713	9390

diff = mean(Senior O) - mean(Technici)	Pr(|T| > |t|) = 0.7596
diff = mean(Senior O) - mean(Workers)	Pr(|T| > |t|) = 0.0000
diff = mean(Senior O) - mean(Elementa)	Pr(|T| > |t|) = 0.0000
diff = mean(Technici) - mean(Workers)	Pr(|T| > |t|) = 0.0000
diff = mean(Technici) - mean(Elementa)	Pr(|T| > |t|) = 0.0000
diff = mean(Workers) - mean(Elementa)	Pr(|T| > |t|) = 0.0001

Source: European Working Conditions Survey, 2005

The EWCS data casts doubts about the difference between the mean satisfaction of the group of "Officials, Managers and Professionals" and the mean job satisfaction of the next group (Technicians). We assume that this result derives from the similarity between the satisfaction means of Professionals and Technicians observed when using five occupational categories.

IV.2 Stepwise approach: empirical results

We aim to evaluate whether the differences in job satisfaction that we observe across Occupations are maintained once we control for relevant variables at individual, household and work related level. We therefore adopt a stepwise approach which consists in regressing self-reported job satisfaction on Occupational dummies and adding control variables at each step, so that the final specification will involve all variables, as in equation (1). In order to check the robustness of our conclusions, we apply the same approach to the alternative sample from the EWCS. All estimates presented in this section are performed using Ordinary Least Squares (OLS). The outcome of both series of specifications is reported in Table 3 (only occupational coefficients). Appendix Tables A3 and A4 display all estimation results for the ESS and the EWCS.

Model 1: **At this first step, job satisfaction is explained just by Occupational dummies and country dummies**.

Results are presented in Table 3 column (1) (ESS dataset) and column (5) (EWCS dataset). The occupations enter in the job satisfaction equation (1) as dummy variables that take the value of one if the respondent belongs to that occupation *O* (with *O* running from 1 to 4), zero otherwise. The omitted category is Elementary Occupations (or Labourers). As reported in Table 3, the coefficients associated with the three remaining occupational dummies are significantly different from zero. The coefficients of the occupational dummies give the "extra level" of job satisfaction (or percentage increase) associated with that occupation, with respect to the job satisfaction achieved by

Labourers. The quantitative effect increases as one climbs the ladder of occupations. Indeed, being a Manager/Professional provides a "satisfaction bonus" of 9% (or nearly 1 point in an eleven-points scale) whereas Worker's satisfaction is 4,6% (or 0.51 points) higher that the satisfaction of those performing manual tasks. In other words, Managers' satisfaction bonus nearly doubles that of Workers. This results hold when using the EWCS dataset, although in this case Managers/Professionals achieve an extra satisfaction of 6.1% with respect to those engaged in manual labor (or 0.24 points in a four points scale) whereas Workers report a plus of satisfaction of 2%.

Model 2: As in model 1, plus individual variables and household variables.

Results are presented in second (for ESS) and sixth (for EWCS) columns of Table 3. The individual and household variables introduced in the model are those frequently used in the literature. Individual characteristics are gender, age, age squared, citizenship status, whether the respondent belongs to a minority group, general health state and years of education. Household variables include marital status, size of household, whether the respondents have children living at home and whether the respondent's partner works. The ESS gives information on *household* earnings whereas the EWCS reports *individual* revenues, which is obviously a more accurate indicator of income. Yet, we cannot control for *actual* revenues, as respondents are not asked directly about their resources. Instead, individuals are given a set of income bands so that they can indicate in which band their earnings lie[11] (see Appendix Table A1 for a description of variables).

In comparison with the previous step, the quantitative effects of the occupational variables do not change substantially. After controlling for individual and household characteristics, being a Manager/Professional would provide an extra job satisfaction of 8,8% (over Laborers) whereas being a Worker gives a plus of contentment of 4,6%.

With EWCS data, the quantitative effects of occupational variables appear to be smaller than in the previous specification. Managerial/Professional positions now provide a 3,1% more satisfaction at work than Manual and Service positions. They have lost half of their satisfaction bonus. The satisfaction gap between Workers and those performing the most basic tasks is reduced to 1,4%. The changes in the occupational coefficients due to the introduction of individual and household variables in equation (1) are more noticeable when using EWCS because this survey measures individual income more precisely than the ESS.

Regarding the effect of the control variables, our results are in line with what was found by Clark (1996) with respect to health status (a significant and positive effect). Gender is non significant in our study. This result is in line with Sousa-Poza & Sousa-Poza, (2000) who also show that the gender gap in job satisfaction do not exist or can be explained by differences in working conditions or wages, for most of the countries in their sample (21 countries). However, it contradicts Clark (1997) who observes a higher job satisfaction for women even though they have worse jobs than men. The author suggests that this

[11] Giving respondents a scale tends to produce higher response rates than asking directly about income. The variable income is in a 12-points scale in the ESS and in a 10-points scale in the EWCS.

could be due to lower job expectations form women with respect to men. Age seems to have a negative effect, which could suggest that older workers suffer a certain job fatigue and therefore tend to report lower job satisfaction. Most of the literature (Clark et al., 1996, Sloane & Ward, 2001; Blanchflower & Oswald, 1999) reports a U-shape relationship between age on job satisfaction. By contrast, neither the marital status of the respondent nor the fact that the spouse/partner works affect the respondent's job satisfaction[12]. The effect of education on job satisfaction is negative. This could be explained by the fact that expectations increase with the level of education and if those expectations are not met, the satisfaction at work tends to be lower (Hamermesh, 2001).

Model 3: Model 2 + classical job-related variables.

Equation (1) now includes a set of work-related variables which at this step comprise "conventional" determinants of job satisfaction usually found in the literature: a dummy variable to indicate whether the respondent is self-employed, type of contract (no contract, limited or unlimited), sense of job security, hours worked, hours worked squared, size of establishment and sector of activity. Results are presented in third (for ESS) and seventh (for EWCS) columns of Table 3.

Having any occupation other than Laborer still brings about more job satisfaction. That is, after controlling for conventional working conditions all occupational coefficients β_1 are significant. However, the positive effect on satisfaction of being a Manager/Professional or a Technician has considerably diminished. As the satisfaction bonus for Managers/Professionals drops more than one percentage point, so does the gap between those and Workers. This suggests that conventional working conditions account for a large part of the observed differences in job satisfaction across occupations. Yet, these factors alone do not fully explain the different job satisfaction levels.

With the EWCS data, the coefficients of the occupational variables change less when passing from specification 2 to 3 than in the previous step.

The quantitative effects of the conventional working conditions variables on job satisfaction are not significant, with the notable exception of sense of job security. In effect, the lower the probability of becoming unemployed in the next 12 months is, the higher the job satisfaction. This conclusion clearly matches the existing evidence on the importance of job security (Clark, 2001; Blanchflower & Oswald, 1999) and the negative effects of unemployment on job and life satisfaction (Clark & Oswald, 1994; Lucas et al., 2004).

Model 4: Model 3 + non conventional job related characteristics.

At this final step, we include in the model non conventional job-related variables, such as the level of responsibility (as number of people the respondent supervises), the autonomy

[12] A number of papers have demonstrated a positive correlation between marital status and life satisfaction (Blanchflower & Oswald, 2004). Clark (1996) finds the same positive relationship between marital status and job satisfaction.

(as the degree of which the respondent is allowed to decide how daily work is organized), the influence (as the degree of which the respondent can influence policy decisions about the firm activities) and the opportunities to learn that the respondent enjoys at work. Results are presented in Table 3, fourth (ESS) and eight (EWCS) columns.

Whereas skills development and work organization (including worker control) are variables generally used in the job satisfaction literature, the other two covariates (supervisory role and influence) are less popular (Blanchflower & Oswald, 1999). To the best of our knowledge, no research has been conducted to relate non-conventional variables and occupations.

Performing supervisory tasks and influencing decisions entail exerting power. Authority is however not the only issue at play, as these two activities require establishing close (and often tense) contacts with others within the organization. The quality of those relations is very difficult to measure. We can only gauge the degree to which the respondent is exposed to those interactions. We hypothesize that supervisory role, and influence, jointly with opportunities to learn and control over own tasks are determinants of the respondent's overall evaluation of her job. As a matter of fact, using ESS data, all variables appear to have a significant positive effect on job satisfaction, except for the supervisory role.

More importantly, those control variables do influence the way in which the occupational categories affect satisfaction with work. In all models the coefficients of the occupational dummies are significant. However, in the first specification, the differences in extra satisfaction across occupations were noticeable whereas now those gaps are much smaller. In the first model, being a Manager/Professional would prompt nearly twice as much job satisfaction as being a Worker. After controlling for individual, household as well as working conditions, both occupational categories yield about the same extra job satisfaction (with respect to the reference group). Actually, it is at the last specification (i.e. when controlling for non-conventional job-related characteristics) that the gap among those two occupational categories is considerably reduced. At that step, the quantitative effect of being a Worker diminishes for the first time in the series of specifications moving from 4,5% to 3,9%. However, the satisfaction bonus (with respect to Laborers) of Managers/Professionals shrinks from 7,6% to 4,4%. One additional result of the inclusion of non conventional job-related variables in the specification is that the job satisfaction premium of Technicians falls below that of the Workers.

Using the EWCS, adding control variables to the model also narrows the gaps in satisfaction between each of the three occupational categories and the reference group, Labourers. The extra satisfaction obtained by being a Manager/Professional passes from 2,7% in the previous specification to 2,2%. It is now less than one percentage point larger than the coefficient associated with the occupational category Worker.

Table 3: Estimates of the effect of Occupation on Job Satisfaction

VARIABLES	ESS MODEL 1	ESS MODEL 2	ESS MODEL 3	ESS MODEL 4	EWCS MODEL 1bis	EWCS MODEL 2bis	EWCS MODEL 3bis	EWCS MODEL 4bis
Senior Official or Manager or Professional	0.99***	0.97***	0.84***	0.49***	0.24***	0.13***	0.11***	0.08***
	(0.09)	(0.10)	(0.10)	(0.11)	(0.03)	(0.03)	(0.03)	(0.03)
Technician	0.69***	0.68***	0.62***	0.37***	0.20***	0.15***	0.13***	0.11***
	(0.09)	(0.10)	(0.10)	(0.10)	(0.03)	(0.03)	(0.03)	(0.03)
Worker	0.51***	0.51***	0.50***	0.43***	0.08***	0.06**	0.05**	0.05**
	(0.09)	(0.09)	(0.09)	(0.09)	(0.02)	(0.02)	(0.02)	(0.02)
Constant	6.85***	7.44***	6.90***	6.75***	3.05***	3.04***	3.04***	3.00***
	(0.11)	(0.52)	(0.56)	(0.55)	(0.04)	(0.12)	(0.14)	(0.14)
Observations	10294	10294	10294	10294	9390	9390	9390	9390
R-squared	0.04	0.07	0.11	0.15	0.10	0.13	0.16	0.17

Robust standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1

Dependent Variable: Self reported job satisfaction. Values range from 0 to 10 in the ESS and from 1 to 4 in the EWCS.
Control Variables: Additional covariates in column (1) and (5) are country dummies; Columns (2) and (6) include covariates in previous column plus individual and household characteristics such as marital status, having children at home, household size, partner works, household income (ESS) and personal income (EWCS). Columns (3) and (7) include covariates in previous columns plus conventional job variables (duration of contract, sense of job security, size of establishment, sector, hours worked, hours worked squared, self employed or not). Columns (4) and (8) include covariates in previous columns plus unconventional job related characteristics (supervisory role, autonomy, influence, opportunities to learn).

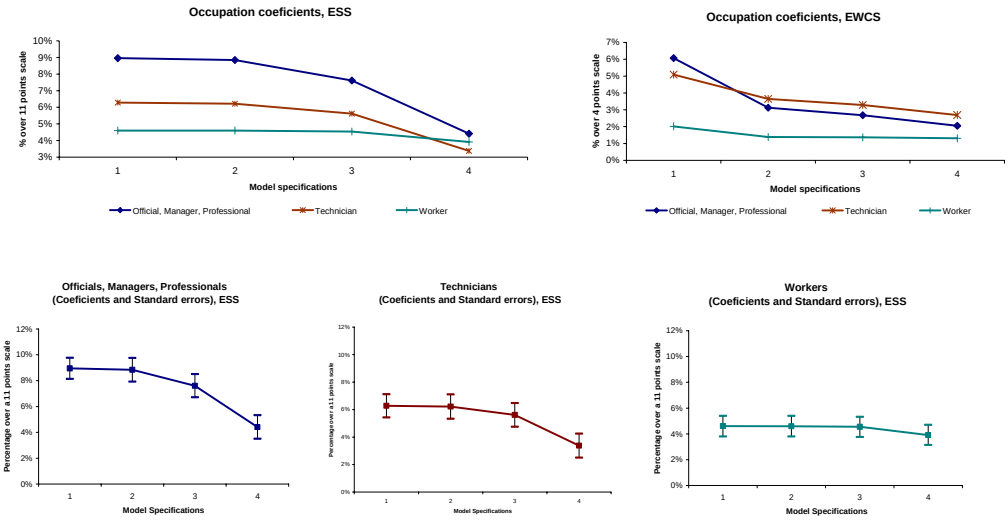
Figure 1 below shows the estimated coefficients of the occupational categories in the four model specifications, for both the ESS and the EWCS (coefficients are expressed as a percentage of the range of the dependent variable Job Satisfaction, as shown in table 3bis).

Table 3bis: Estimates of the effect of Occupation on Job Satisfaction

VARIABLES	ESS (dependent variable Job Satisfaction ranges from 0 to 10)								EWCS (dependent variable Job Satisfaction ranges from 1 to 4)							
	MODEL 1		MODEL 2		MODEL 3		MODEL 4		MODEL 1 bis		MODEL 2 bis		MODEL 3 bis		MODEL 4 bis	
Official, Manager, Professional	**0.99**	9.0%	**0.97**	8.8%	**0.84**	7.6%	**0.49**	4.4%	**0.24**	6.1%	**0.13**	3.1%	**0.11**	2.7%	**0.08**	2.1%
	(0.09)		(0.10)		(0.10)		(0.10)		(0.03)		(0.03)		(0.03)		(0.03)	
Technician	**0.69**	6.3%	**0.68**	6.2%	**0.62**	5.6%	**0.37**	3.4%	**0.20**	5.1%	**0.15**	3.6%	**0.13**	3.3%	**0.11**	2.7%
	(0.09)		(0.10)		(0.10)		(0.10)		(0.03)		(0.03)		(0.03)		(0.03)	
Worker	**0.51**	4.6%	**0.51**	4.6%	**0.50**	4.5%	**0.43**	3.9%	**0.08**	2.0%	**0.06**	1.4%	**0.05**	1.4%	**0.05**	1.3%
	(0.09)		(0.09)		(0.09)		(0.09)		(0.02)		(0.02)		(0.02)		(0.02)	

Robust standard errors in parenthesis
Numbers in shaded areas: coefficients expressed as a percentage of the total number of values (range) of the dependent variable (11 points scale at the ESS and 4 points scale at the EWCS)

Figure 1: Estimates of the Job Satisfaction return to Occupation



We have shown that the job satisfaction premium decreases for all occupational categories when additional covariates are added to the basic model 1. However, there remains a gap in job satisfaction between each of the three occupational categories with respect to the reference category (Laborers). In addition, we noted that most of the difference in job satisfaction between Managers/Professionals and Workers can be explained by non conventional job-related variables. This premium, albeit lower, still persists in the last specification.

V. Robustness check

V.1 Job satisfaction, a polychotomous variable

In our analysis we have employed OLS as estimation method for the sake of simplicity. However, the dependent variable (job satisfaction) could be considered a polychotomous variable which categories follow a natural order (extremely satisfied, very satisfied, etc). The coding of the dependent variable reflects a ranking and therefore the difference between a 1 and a 2 cannot be treated as equivalent to the difference between a 2 and a 3. Strictly speaking, using OLS estimates would not be appropriate in this case.[13] Instead, an ordered probit model could be used. Table 4 (ESS sample only) displays the estimated marginal effects associated with the highest level of job satisfaction, and this for each occupational dummy for the four alternative specifications Annex A.4 includes a table with the full set of marginal effects for the three occupational dummies in the four models. Those marginal effects are computed at the mean of the independent variables.

[13] Note that according to Ferrer-i-Carbonell & Frijters (2004), presuming ordinality or cardinality of happiness scores makes little difference to the results.

Table 4: Marginal effects of the occupation on the probability to report the highest level of job satisfaction (ESS)

	(1) MODEL 1	(2) MODEL 2	(3) MODEL 3	(4) MODEL 4
S. Officials Managers Professionals	0.085	0.089	0.075	0.039
	(0.009)	*(0.010)*	*(0.010)*	*(0.009)*
Technicians	0.054	0.058	0.052	0.028
	(0.009)	*(0.009)*	*(0.009)*	*(0.008)*
Workers	0.037	0.039	0.038	0.033
	(0.007)	*(0.007)*	*(0.006)*	*(0.006)*
Obs.	10294	10294	10294	10294

Robust standard errors in parentheses
Dependent Variable: Self reported job satisfaction. Values range from 0 to 10.
Control Variables: Additional covariates in column (1) are country dummies; Column (2) includes covariates in previous column plus individual and household characteristics such as marital status, having children at home, household size, partner works, household income (ESS). Column (3) includes covariates in previous columns plus conventional job variables (duration of contract, sense of job security, size of establishment, sector, hours worked, hours worked squared, self employed or not). Column (4) includes covariates in previous columns plus unconventional job related characteristics (supervisory role, autonomy, influence, opportunities to learn).
Source: European Social Survey 2006/2007

These results are in line with those previously obtained. The three categories (Officials/Managers/Professionals, as well as Technicians and Workers) are more likely to report the highest level of job satisfaction than the reference category (Laborers). Although the estimated marginal effects of those three categories slightly increase when passing from model 1 to model 2, in subsequent specifications the marginal effects decrease as job-related covariantes are included in the job satisfaction equation. For example, in the case of Managers/Professionals, the probability of reporting the highest level of job satisfaction raises by 0,085 when no covariantes but country dummies are included in equation (1) whereas this figure only reaches 0,039 in the less parsimonious specification. Furthermore, we observe that the marginal effects of Managers/Professionals always surpass those associated with the other occupational categories. However, the difference shrinks as the models include more variables. In particular, the gap between the estimated marginal effects associated with Manager/Professionals and those related with Workers practically fade away in the last specification, where we introduced non-conventional job conditions into the model.

V.2 Endogeneity of the occupational choice

What happens if the selection of an occupation is not random?. If we assume that individuals make occupational choices that depend on unobservable characteristics that are also correlated with job satisfaction, then the disturbance term in equation (1) will have a non zero expectation (and the OLS estimates presented in section 4 could be biased). As for example, it could be possible that one personality trait (such as optimism, a variable that is unobservable) simultaneously affects the self-reported feeling of satisfaction and the probability to choose one specific occupation. This could explain why the Managers and Professionals experience a significant satisfaction premium with

respect to elementary workers, even after controlling for individual characteristics as well as conventional and non conventional job-related characteristics.

To account for the potential endogeneity of the occupational choice, we adopt a control function approach while considering the occupational choice as a multi-treatment case. The control function (henceforth CF) approach relies on similar identification conditions than instrumental variable methods and consists in recovering the causal effect of the treatment (i.e. the occupational choice) by controlling directly in the job satisfaction equation for the correlation between ε_i and the treatment (occupational choice).

The process of occupational choice is modeled as follows:

$$O^* = W_i\theta + \varsigma_i \tag{2}$$

where O* is a latent unobservable variable, W_i is a set of covariates that includes the control variables X_i_introduced in equation (1) as well as a restriction exclusion Z_i_that satisfies the following condition $E[\varepsilon_i|Z_i]=E[\varepsilon_i]=0$. Endogeniety arises if ζ_i is correlated with ε_i. We exploit the sequential order of the four occupational categories and define

$$O_i = j \quad \text{if} \quad \alpha_{j-1} < O^* \leq \alpha_j$$

with j=1,...,4 and j=1(4) corresponding to the lowest (highest) occupations and $\alpha_0=-\infty$ and $\alpha_4=+\infty$. The other j-1 parameters α_j are unknown and have to be estimated jointly with θ by maximum likelihood. If ζ_i_is normally distributed and $\Phi(.)$ is the cumulative standard normal distribution of ζ_i, , then:

$$\Pr(O_i=j) = \Phi(\alpha_j\_ - W_i\theta) - \Phi(\alpha_{j-1} - W_i\theta)$$

In the second stage, we estimate the augmented job satisfaction equation given by :

$$Y_i = W_i\theta + \sum_{j=1}^{3} Occ_{ji}\delta_j + \rho\sum_{j=1}^{4} Occ_{ji}\hat{\lambda}_{ji} + \varepsilon_i \tag{3}$$

with λ_{ji} the Inverse Mills ratio (IMR) derived from the ordered probit selection rule. The estimated Mills ratios are given by:

$$\hat{\lambda}_{ji} = \frac{\phi(\alpha_{j-1} - W_i\widehat{\beta}) - \phi(\alpha_j - W_i\widehat{\beta})}{\Phi(\alpha_j - W_i\widehat{\beta}) - \Phi(\alpha_{j-1} - W_i\widehat{\beta})}$$

with $\varphi(.)$ the standard normal density function. The term $\sum^4_{j=1}$_$Occ_{ji}\hat{\lambda}_{ji}$ (named control functions) eliminate the bias induced by the endogeneity of the occupational choice. The OLS estimate of equation (3) will produce consistent returns to education under the conditions that the occupational assignment rule is correct and the instrument Z_i satisfies the two necessary conditions to be valid: (i) uncorrelated with ε_i (orthogonality

condition), (ii) relevant, i.e, strongly correlated with the occupational choice. Because equation (3) includes a generated regressor, the standard errors have to be boostrapped.

We use as exclusion restriction the occupational status of the father. The latter is defined by a set of four occupational dummies that describes the occupation of the father when the respondent was 15 years old. The occupational dummies take value one if the father was respectively a Laborer, a Worker, a Technician or an Official/Manager/Professional, and zero otherwise.

Several studies demonstrate that the individual preferences for specific occupations are in a large part driven by the parents' occupation (see for instance Lentz and Laband 1989) . Similarly, the literature on social mobility in earnings (for example, Goldthrope et al., 1987) also point to the occupation of the father as one important determinant of professional choices made by their offspring. We postulate that once we control for X_i in equation (3), the occupation of the father has not a direct effect on the job-satisfaction of the respondent. The consistency of the results hinges on this assumption being correct.

Results for the first stage regression are displayed in Table (5). We only present the marginal effects of the occupation of the father on the probability for the respondents of being in each of the four occupational categories. As expected, we observe that having a father who was a Technician increases the probability of becoming an Official/Manager or Professional by 0.062 and reduces by 0.08 the probability of being a Worker[14].

Table 5: First stage estimates. Determinants of the occupational choice of the respondents (marginal effects)

	OCCUPATION OF THE RESPONDENT			
	Labourer	Worker	Technician	Professional/Manager
FATHER'S OCCUPATION				
Labourer	0.004	0.025	-0.010	-0.018
	(0.000)	*(0.020)*	*(0.010)*	*(0.020)*
Worker	0.001	0.005	-0.002	-0.003
	(0.000)	*(0.020)*	*(0.010)*	*(0.020)*
Technician	-0.009	-0.080	0.027	0.062
	(0.000)	*(0.030)*	*(0.010)*	*(0.030)*
Professional/Manager	-0.008	-0.061	0.023	0.046
	(0.000)	*(0.030)*	*(0.010)*	*(0.020)*
Obs.	9534	9534	9534	9534

Standard errors in parentheses
Dependent Variable: Occupational status of the respondent.
Control Variables: Additional covariates are country dummies, individual and household characteristics, conventional and non conventional job-related variables.
Source: European Social Survey 2006/2007

[14] The sample size is smaller due to the number of observations available for the variable occupation of the father.

Table 6 presents the job satisfaction returns to occupation when the endogeneity of the occupation choice is taken into account. Column (3) shows the results obtained after using OLS to estimate the second stage equation and Column (4) displays the marginal effects derived after estimating that second stage equation with ordered probit (only ME associated with the highest level of job satisfaction are reported, see in Appendix A.5 the full set of marginal effects).

For the sake of clarity, we include in column (1) the OLS estimates reported in section 4 of this paper (summarized in table 3). Finally, column (2) presents the marginal effects obtained in section 5.1 after assuming that job satisfaction is a polychotomous variable (as shown in table 4).

Table 6: Comparison of results with different estimation methods (ESS, model 4)

			Control Function 2nd stage	
	OLS Coeff	**OPROBIT** ME satisfc 10	**OLS** Coeff	**OPROBIT** ME stsfc 10
Officials Managers Professionals	0.485	0.039	0.568	0.047
	(0.10)	*(0.01)*	*(0.23)*	*(0.02)*
Technicians	0.372	0.028	0.374	0.028
	(0.10)	*(0.01)*	*(0.16)*	*(0.01)*
Workers	0.431	0.033	0.386	0.029
	(0.09)	*(0.01)*	*(0.10)*	*(0.01)*
Obs.	*10294*	*10294*	*9534*	*9534*

Standard errors in parentheses
Dependent Variable: Self reported job satisfaction. Values range from 0 to 10.
Additional covariates are country dummies, individual and household characteristics, conventional and non conventional job-related variables.
Source: European Social Survey 2006/2007

The results of the robustness checks back the conclusions obtained in section 4. In effect, the estimated OLS coefficients of the occupational dummies displayed in column (3) are similar to those in column (1). For all occupations, there is always a satisfaction premium with respect to the reference category (Labourers). However, after controlling for endogeneity of the occupational choice, the satisfaction gap between Managers/Professionals and Workers (0.568 to 0.386) is wider than in the standard case (0.485 to 0.431). The results after estimation with ordered probit are also consistent. The marginal effects displayed in columns (2) and (4) are similar: even if we adapt the specification to account for the endogeneity in the occupational choice, the probability of

reporting higher levels of satisfaction is larger for Manager/Professionals than for Workers.

An interesting extension of the work presented in this paper is the analysis of the robustness of the results to a choice of a more general measure of satisfaction. This would involve abandoning a domain-specific measure for a wider indicator of well-being. Preliminary results based on the ESS data (which provide information on self reported happiness) show that although Managers report a higher level of job satisfaction, they appear to be less happy that Professionals (the occupational category just below). A deeper analysis of this dichotomy would involve discussing the role of the balance between different life domains (i.e. satisfaction at and outside work).

Finally, among our results there are some surprising findings which could be worth exploring. As for example, the fact that in the final specification using the ESS sample the return in terms of job satisfaction associated with a Professional occupational status actually falls below that of Managers/Professionals and even that of Workers. In the case of the EWCS, Technicians' extra level of happiness exceeds the coefficient associated with Managers/Professionals.

VI. Conclusions

Having observed considerable differences in the mean job satisfaction of the respondents, we have sought to determine whether those differences are occupational specific or can be explained by the effect of control variables at individual, household and job level.

We have used a stepwise approach starting with a simple regression model in which job satisfaction is explained by occupations and country dummies. Our method consists in introducing variables at each step in order to progressively control for individual, household and job-related characteristics that could influence the effect of occupation on job satisfaction. Job-related variables are split into "conventional" working conditions and "un-conventional" work-related characteristics, such as autonomy, supervisory role, influence over the firm's decisions and opportunities to learn. It appears that the substantial satisfaction gap between those holding Managerial positions and Workers decreases at each step and practically disappears in the last specification. These results still hold when using an alternative data set (the EWCS). In addition, the results appear to be robust to alternative methods of estimation (ordered probit) and an alternative specification that takes into account the potential endogeneity of the occupational choice.

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VIII. Appendix

Table A 1 Description of variables (ESS sample and EWCS sample)

ESS N= 10420	Description	Min	Max	Mean (SD)	EWCS N= 9960	Description	Min	Max	Mean (SD)
OUTCOME VARIABLES					**OUTCOME VARIABLES**				
Job Satisfaction	How satisfied with current job, all things considered	0	10	7.213 *(2.018)*	Job Satisfaction	How satisfied with working conditions in main paid job	0	4	3.040 *(0.717)*
INDEPENDENT VARIABLES					**INDEPENDENT VARIABLES**				
Occupational dummies					**Occupational dummies**				
Senior official or manager	Whether the respondent is a senior official or manager (ISCO 88 codes 11/13) 0=No 1=Yes	0	1	0.080 *(0.271)*	Senior official or manager	Whether the respondent is a senior official or manager (ISCO 88 codes 11/13) 0=No 1=Yes	0	1	0.048 *(0.215)*
Professional	Whether the respondent is a professional (ISCO 88 codes 21/24) 0=No 1=Yes	0	1	0.176 *(0.381)*	Professional	Whether the respondent is a professional (ISCO 88 codes 21/24) 0=No 1=Yes	0	1	0.155 *(0.362)*
Technician	Whether the respondent is a technician or associated professional (ISCO 88 codes 31/34) 0=No 1=Yes	0	1	0.203 *(0.402)*	Technician	Whether the respondent is a technician or associated professional (ISCO 88 codes 31/34) 0=No 1=Yes	0	1	0.188 *(0.391)*
Worker	Whether the respondent is a worker (ISCO 88 codes 41/83) 0=No 1=Yes	0	1	0.461 *(0.499)*	Worker	Whether the respondent is a worker (ISCO 88 codes 41/83) 0=No 1=Yes	0	1	0.484 *(0.500)*
Elementary Occupation	Whether the respondent has an elementary occupation (ISCO 88 codes 91-93) 0=No 1=Yes	0	1	0.080 *(0.272)*	Elementary Occupation	Whether the respondent has an elementary occupation (ISCO 88 codes 91-93) 0=No 1=Yes	0	1	0.125 *(0.331)*
Individual characteristics					**Individual characteristics**				
Citizen	Whether the respondent is a citizen of the country of the interview 0=No 1=Yes	0	1	0.957 *(0.202)*	Citizen	Whether the respondent is a citizen of the country of the interview 0=No 1=Yes	0	1	0.966 *(0.181)*
Minority	Whether the respondent belongs to a minority group 0=No 1=Yes	0	1	0.044 *(0.204)*	Minority	Whether the respondent belongs to a minority group 0=No 1=Yes	0	1	0.011 *(0.106)*
Age	Age of the respondent	18	75	41.958 *(11.477)*	Age	Age of the respondent	18	75	41.012 *(11.295)*
Age2	Age squared	324	5612.51	1892.132 *(977.719)*	Age2	Age squared	324	5625	1809.553 *(943.888)*
Sex	Gender of the respondent 0=Female 1=Male	0	1	0.510 *(0.500)*	Sex	Gender of the respondent 0=Female 1=Male	0	1	0.458 *(0.498)*
Years of education	Years of full time education the respondent completed	0	20	13.623 *(3.536)*	Education	Level of education, ISCES codes	0	14	5.360 *(1.996)*
Health	Whether the respondent felt that her general health was very good or good 0=No 1=Yes	0	1	0.780 *(0.414)*	Health	Whether the respondent was ever absent from job in the last 12 months for reasons of health problems 0=No 1=Yes	0	1	0.724 *(0.447)*
Household characteristics					**Household characteristics**				
Married	Respondent's current legal marital status 0=Other 1=Married	0	1	0.559 *(0.497)*	Married	Whether respondent lives with spouse or partner 0=No 1=Yes	0	1	0.671 *(0.470)*
Children	Children (sons and/or daughters) living at home 0=No 1=Yes	0	1	0.519 *(0.500)*	Children	Children (sons and/or daughters) living at home 0=No 1=Yes	0	1	0.539 *(0.499)*
Household Size	Number of people in household	1	12	2.900 *(1.332)*	Household Size	Number of people in household	1	13	2.984 *(1.344)*
Partner works	Whether the respondent's partner was in paid job for last 7 days 0=No 1=Yes	0	1	0.117 *(0.321)*	Partner works	Whether the respondent's partner was in paid job for last 7 days 0=No 1=Yes	0	1	0.654 *(0.476)*
Household income_1	Household's monthly total net income, all sources, less than €150 0=No 1=Yes	0	1	0.0035509 *(0.059)*	Personal income_1	Respondent's monthly total net income, first decile of country 0=No 1=Yes	0	1	0.105 *(0.307)*
Household income_2	Household's monthly total net income, all sources, €150 to under €300 0=No 1=Yes	0	1	0.0143954 *(0.119)*	Personal income_2	Respondent's monthly total net income, second decile of country 0=No 1=Yes	0	1	0.079 *(0.269)*
Household income_3	Household's monthly total net income, all sources, €300 to under €500 0=No 1=Yes	0	1	0.0394434 *(0.195)*	Personal income_3	Respondent's monthly total net income, third decile of country 0=No 1=Yes	0	1	0.084 *(0.277)*
Household income_4	Household's monthly total net income, all sources, €500 to under €1000 0=No 1=Yes	0	1	0.0956814 *(0.294)*	Personal income_4	Respondent's monthly total net income, fourth decile of country 0=No 1=Yes	0	1	0.085 *(0.279)*
Household income_5	Household's monthly total net income, all sources, €1000 to under €1500 0=No 1=Yes	0	1	0.1002879 *(0.300)*	Personal income_5	Respondent's monthly total net income, fifth decile of country 0=No 1=Yes	0	1	0.114 *(0.317)*
Household income_6	Household's monthly total net income, all sources, €1500 to under €2000 0=No 1=Yes	0	1	0.1142035 *(0.318)*	Personal income_6	Respondent's monthly total net income, sixth decile of country 0=No 1=Yes	0	1	0.101 *(0.301)*
Household income_7	Household's monthly total net income, all sources, €2000 to under €2500 0=No 1=Yes	0	1	0.1105566 *(0.314)*	Personal income_7	Respondent's monthly total net income, seventh decile of country 0=No 1=Yes	0	1	0.109 *(0.311)*
Household income_8	Household's monthly total net income, all sources, €2500 to under €3000 0=No 1=Yes	0	1	0.124952 *(0.331)*	Personal income_8	Respondent's monthly total net income, eighth decile of country 0=No 1=Yes	0	1	0.115 *(0.319)*
Household income_9	Household's monthly total net income, all sources, €3000 to under €5000 0=No 1=Yes	0	1	0.2357006 *(0.424)*	Personal income_9	Respondent's monthly total net income, nineth decile of country 0=No 1=Yes	0	1	0.100 *(0.300)*
Household income_10	Household's monthly total net income, all sources, €5000 to under €7500 0=No 1=Yes	0	1	0.1077735 *(0.310)*	Personal income_10	Respondent's monthly total net income, tenth decile of country 0=No 1=Yes	0	1	0.109 *(0.312)*
Household income_11	Household's monthly total net income, all sources, €7500 to under €10000 0=No 1=Yes	0	1	0.034261 *(0.182)*					
Household income_12	Household's monthly total net income, all sources, €10000 or more 0=No 1=Yes	0	1	0.0191939 *(0.137)*					

ESS N= 10420	Description	Min	Max	Mean (SD)
Conventional Job Characteristics				
No contract	Respondent has no contract 0=No 1=Yes	0	1	0.056 *(0.230)*
Type of contract: limited duration	Respondent has a contract of limited duration 0=No 1=Yes	0	1	0.130 *(0.336)*
Type of contract: limited duration	Respondent has a contract of unlimited duration 0=No 1=Yes	0	1	0.814 *(0.389)*
Job security very low	Whether the respondent felt that it was very likely to become unemployed in the next 12 months 0=No 1=Yes	0	1	0.040 *(0.196)*
Job security low	Whether the respondent felt that it was likely to become unemployed in the next 12 months 0=No 1=Yes	0	1	0.094 *(0.291)*
Job security medium	Whether the respondent felt that it was not very likely to become unemployed in the next 12 months 0=No 1=Yes	0	1	0.379 *(0.485)*
Job security high	Whether the respondent felt that it was not at all likely to become unemployed in the next 12 months 0=No 1=Yes	0	1	0.488 *(0.500)*
Size of establishment micro	Less than 10 people employed at respondent's workplace 0=No 1=Yes	0	1	0.235 *(0.424)*
Size of establishment small	Between 10 and 24 people employed at respondent's workplace 0=No 1=Yes	0	1	0.191 *(0.393)*
Size of establishment medium	Between 25 and 99 people employed at respondent's workplace 0=No 1=Yes	0	1	0.261 *(0.439)*
Size of establishment large	Between 100 and 499 people employed at respondent's workplace 0=No 1=Yes	0	1	0.173 *(0.378)*
Size of establishment very large	More than 500 people people employed at respondent's workplace 0=No 1=Yes	0	1	0.140 *(0.347)*
Agriculture, hunting, forestry and fishing	Sector at which belongs the firm/organisation where the respondent works : Agriculture, etc (Nace 1.1 groups 1/5) 0=No 1=Yes	0	1	0.019 *(0.137)*
Industry	Sector at which belongs the firm/organisation where the respondent works : Industry (Nace 1.1 groups 10/45) 0=No 1=Yes	0	1	0.271 *(0.445)*
Services	Sector at which belongs the firm/organisation where the respondent works : Services (Nace 1.1 groups 50/74) 0=No 1=Yes	0	1	0.335 *(0.472)*
Public administration and defense	Sector at which belongs the firm/organisation where the respondent works : Public Administration and defense (Nace 1.1 group 75) 0=No 1=Yes	0	1	0.074 *(0.262)*
Other services	Sector at which belongs the firm/organisation where the respondent works : Other Services (Nace 1.1 groups 80/99) 0=No 1=Yes	0	1	0.300 *(0.458)*
Hours worked	Total hours normally worked per week overtime included	0	80	39.899 *(10.735)*
Hours worked 2	Hours worked squared	0	6400	1707.110 *(831.601)*
Self employed	Whether the respondent is self employed 0=No (Employee) 1=Yes	0	1	0.014 *(0.118)*
Unconventional Job Characteristics				
Supervisory role	Number of people responsible for in job	0	1600	5.348 *(30.084)*
Autonomy	Allowed to decide how daily work is organised	0	10	6.641 *(3.035)*
Influence	Allowed to influence policy decisions about activities of organisation	0	10	3.904 *(3.180)*
Opportunities to learn	Whether the respondent has attended a course to improve knowledge or skills at 0=No 1=Yes	0	1	0.536 *(0.499)*

Source: European Social Survey, 2006/7. Country dummies are included in all specifications

EWCS N= 9960	Description	Min	Max	Mean (SD)
Conventional Job Characteristics				
No contract	Respondent has no contract 0=No 1=Yes	0	1	0.050 *(0.219)*
Type of contract: limited duration	Respondent has a contract of limited duration 0=No 1=Yes	0	1	0.130 *(0.336)*
Type of contract: limited duration	Respondent has a contract of unlimited duration 0=No 1=Yes	0	1	0.820 *(0.384)*
Job security very low	Whether the respondent felt that he might lose job in next 6 months: strongly agree 0=No 1=Yes	0	1	0.063 *(0.243)*
Job security low	Whether the respondent felt that he might lose job in next 6 months: agree 0=No 1=Yes	0	1	0.100 *(0.300)*
Job security medium	Whether the respondent felt that he might lose job in next 6 months: Neither agree nor disagree 0=No 1=Yes	0	1	0.121 *(0.326)*
Job security high	Whether the respondent felt that he might lose job in next 6 months: disagree 0=No 1=Yes	0	1	0.257 *(0.437)*
Job security very high	Whether the respondent felt that he might lose job in next 6 months: Strongly disagree 0=No 1=Yes	0	1	0.459 *(0.498)*
Size of establishment micro	Number of employees in local establishment: One-person company 0=No 1=Yes	0	1	0.026 *(0.160)*
Size of establishment small	Number of employees in local establishment: 2-9 employees 0=No 1=Yes	0	1	0.241 *(0.428)*
Size of establishment medium	Number of employees in local establishment: 10-49 employees 0=No 1=Yes	0	1	0.344 *(0.475)*
Size of establishment large	Number of employees in local establishment: 50-249 employees 0=No 1=Yes	0	1	0.234 *(0.424)*
Size of establishment very large	Number of employees in local establishment: 250+ employees 0=No 1=Yes	0	1	0.154 *(0.361)*
Agriculture, hunting, forestry and fishing	Sector at which belongs the firm/organisation where the respondent works : Agriculture, etc (Nace 1.1 groups 1/5) 0=No 1=Yes	0	1	0.022 *(0.148)*
Industry	Sector at which belongs the firm/organisation where the respondent works : Industry (Nace 1.1 groups 10/45) 0=No 1=Yes	0	1	0.267 *(0.443)*
Services	Sector at which belongs the firm/organisation where the respondent works : Services (Nace 1.1 groups 50/74) 0=No 1=Yes	0	1	0.321 *(0.467)*
Public administration and defense	Sector at which belongs the firm/organisation where the respondent works : Public Administration and defense (Nace 1.1 group 75) 0=No 1=Yes	0	1	0.074 *(0.262)*
Other services	Sector at which belongs the firm/organisation where the respondent works : Other Services (Nace 1.1 groups 80/99) 0=No 1=Yes	0	1	0.315 *(0.465)*
Hours worked	Hours usually worked per week	0	80	38.044 *(9.680)*
Hours worked 2	Hours worked squared	0	6400	1541.024 *(720.491)*
Self employed	Whether the respondent is self employed 0=No (Employee) 1=Yes	0	0	0.000 *(0.000)*
Supervisory role	Number of people working under the supervision of the respondent	0	1250	2.407 *(20.187)*
Autonomy	Respondent able to choose or change order of tasks 0=No 1=Yes	0	1	0.661 *(0.473)*
Influence	Respondent has been consulted about changes in the organisation of work and/or working conditions, last 12months 0=No 1=Yes	0	1	0.527 *(0.499)*
Opportunities to learn	Whether the respondent has attended a course paid by employer 0=No 1=Yes	0	1	0.354 *(0.478)*

Source: European Working Conditions Survey, 2005. Country dummies are included in all specifica

Table A 2 Descriptive statistics of main variables, by country. ESS sample.

ESS	BE					BG					CH					CY					DE					DK				
Variable Name	Obs	Mean	Std. Dev.	Min	Max	Obs	Mean	Std. Dev.	Min	Max	Obs	Mean	Std. Dev.	Min	Max	Obs	Mean	Std. Dev.	Min	Max	Obs	Mean	Std. Dev.	Min	Max	Obs	Mean	Std. Dev.	Min	Max
Job Satisfaction	654	7.509	1.863	0	10	261	6.586	2.519	0	10	648	7.674	1.801	0	10	273	7.667	1.530	2	10	802	6.956	2.279	0	10	642	7.804	1.693	1	10
Occupation: Senior Officials and Managers	654	0.089	0.285	0	1	261	0.065	0.247	0	1	648	0.091	0.288	0	1	273	0.000	0.000	0	0	802	0.040	0.196	0	1	642	0.173	0.378	0	1
Occupation: Professionals	654	0.209	0.407	0	1	261	0.176	0.382	0	1	648	0.199	0.400	0	1	273	0.168	0.375	0	1	802	0.173	0.379	0	1	642	0.202	0.402	0	1
Occupation: Technicians	654	0.265	0.441	0	1	261	0.157	0.365	0	1	648	0.301	0.459	0	1	273	0.128	0.335	0	1	802	0.239	0.427	0	1	642	0.217	0.412	0	1
Occupation: Workers	654	0.364	0.481	0	1	261	0.506	0.501	0	1	648	0.343	0.475	0	1	273	0.626	0.485	0	1	802	0.498	0.500	0	1	642	0.352	0.478	0	1
Occupation: Elementary	654	0.073	0.261	0	1	261	0.096	0.295	0	1	648	0.066	0.249	0	1	273	0.077	0.267	0	1	802	0.050	0.218	0	1	642	0.056	0.230	0	1
Contract duration: no contract	654	0.026	0.159	0	1	261	0.096	0.295	0	1	648	0.023	0.150	0	1	273	0.564	0.497	0	1	802	0.011	0.105	0	1	642	0.097	0.296	0	1
Contract duration: limited	654	0.096	0.295	0	1	261	0.215	0.411	0	1	648	0.054	0.226	0	1	273	0.099	0.299	0	1	802	0.118	0.323	0	1	642	0.062	0.242	0	1
Contract duration : unlimited	654	0.878	0.328	0	1	261	0.690	0.464	0	1	648	0.923	0.267	0	1	273	0.337	0.474	0	1	802	0.870	0.336	0	1	642	0.841	0.366	0	1
Probability to lose job next 12 months: very likely	654	0.026	0.159	0	1	261	0.088	0.284	0	1	648	0.020	0.140	0	1	273	0.029	0.169	0	1	802	0.054	0.225	0	1	642	0.025	0.156	0	1
Probability to lose job next 12 months: likely	654	0.076	0.266	0	1	261	0.157	0.365	0	1	648	0.065	0.246	0	1	273	0.106	0.309	0	1	802	0.079	0.269	0	1	642	0.058	0.233	0	1
Probability to lose job next 12 months: not very likely	654	0.335	0.472	0	1	261	0.475	0.500	0	1	648	0.412	0.493	0	1	273	0.344	0.476	0	1	802	0.469	0.499	0	1	642	0.352	0.478	0	1
Probability to lose job next 12 months: not at all likely	654	0.563	0.496	0	1	261	0.280	0.450	0	1	648	0.503	0.500	0	1	273	0.520	0.501	0	1	802	0.399	0.490	0	1	642	0.565	0.496	0	1
Size establishment: under 10	654	0.220	0.415	0	1	261	0.452	0.499	0	1	648	0.301	0.459	0	1	273	0.443	0.498	0	1	802	0.188	0.391	0	1	642	0.184	0.388	0	1
Size establishment: 10 to 24	654	0.151	0.359	0	1	261	0.184	0.388	0	1	648	0.198	0.398	0	1	273	0.297	0.458	0	1	802	0.192	0.394	0	1	642	0.192	0.394	0	1
Size establishment: 25 to 99	654	0.260	0.439	0	1	261	0.226	0.419	0	1	648	0.235	0.424	0	1	273	0.209	0.407	0	1	802	0.254	0.436	0	1	642	0.304	0.460	0	1
Size establishment: 100 to 499	654	0.191	0.393	0	1	261	0.107	0.310	0	1	648	0.188	0.391	0	1	273	0.033	0.179	0	1	802	0.196	0.397	0	1	642	0.201	0.401	0	1
Size establishment: 500 or more	654	0.177	0.382	0	1	261	0.031	0.173	0	1	648	0.079	0.269	0	1	273	0.018	0.134	0	1	802	0.170	0.375	0	1	642	0.120	0.325	0	1
Sector of activity: Agriculture, hunting, forestry and fishing	654	0.014	0.117	0	1	261	0.042	0.201	0	1	648	0.022	0.146	0	1	273	0.011	0.104	0	1	802	0.022	0.148	0	1	642	0.025	0.156	0	1
Sector of activity: Industry	654	0.278	0.448	0	1	261	0.291	0.455	0	1	648	0.258	0.438	0	1	273	0.136	0.343	0	1	802	0.302	0.459	0	1	642	0.243	0.429	0	1
Sector of activity: Services	654	0.318	0.466	0	1	261	0.318	0.467	0	1	648	0.270	0.444	0	1	273	0.593	0.492	0	1	802	0.335	0.472	0	1	642	0.312	0.463	0	1
Sector of activity: Public administration and defence	654	0.087	0.282	0	1	261	0.073	0.260	0	1	648	0.063	0.244	0	1	273	0.037	0.188	0	1	802	0.075	0.263	0	1	642	0.042	0.201	0	1
Sector of activity: Other activities	654	0.303	0.460	0	1	261	0.276	0.448	0	1	648	0.387	0.488	0	1	273	0.223	0.417	0	1	802	0.266	0.442	0	1	642	0.379	0.485	0	1
Hours worked	654	38.644	11.493	0	80	261	42.414	8.245	14	72	648	39.767	12.999	0	80	273	40.762	8.262	5	72	802	40.647	10.749	3	80	642	38.333	8.231	7	80
Hours worked2	654	1625.225	887.762	0	6400	261	1866.651	720.131	196	5184	648	1750.119	952.346	0	6400	273	1729.538	721.904	25	5184	802	1767.582	863.004	9	6400	642	1537.081	655.564	49	6400
Self Employed	654	0.015	0.123	0	1	261	0.038	0.192	0	1	648	0.012	0.111	0	1	273	0.070	0.255	0	1	802	0.004	0.061	0	1	642	0.037	0.190	0	1
Supervisory tasks: number of people supervised	654	9.323	48.927	0	888	261	1.962	6.834	0	60	648	5.185	19.100	0	300	273	2.172	9.535	0	100	802	6.360	29.944	0	500	642	5.470	18.998	0	350
Autonomy	654	6.852	2.893	0	10	261	5.613	3.601	0	10	648	7.076	2.797	0	10	273	5.857	3.394	0	10	802	6.338	2.976	0	10	642	7.833	2.264	0	10
Influence in decisions	654	3.850	3.195	0	10	261	2.506	3.319	0	10	648	3.872	3.173	0	10	273	2.615	2.953	0	10	802	2.928	3.033	0	10	642	5.044	3.204	0	10
Opportunities to learn (attended course)	654	0.595	0.491	0	1	261	0.230	0.422	0	1	648	0.667	0.472	0	1	273	0.256	0.437	0	1	802	0.464	0.499	0	1	642	0.693	0.462	0	1
Years Education	654	13.427	3.200	0	20	261	12.808	2.792	2	20	648	14.190	3.310	0	20	273	12.670	3.141	0	20	802	14.176	2.921	2	20	642	14.234	4.204	0	20

ESS	EE					ES					FI					FR					GB					HU				
Variable Name	Obs	Mean	Std. Dev.	Min	Max	Obs	Mean	Std. Dev.	Min	Max	Obs	Mean	Std. Dev.	Min	Max	Obs	Mean	Std. Dev.	Min	Max	Obs	Mean	Std. Dev.	Min	Max	Obs	Mean	Std. Dev.	Min	Max
Job Satisfaction	400	7.015	2.126	0	10	504	7.175	1.894	0	10	771	7.562	1.638	0	10	818	6.866	2.157	0	10	834	6.861	2.397	0	10	386	6.938	2.402	0	10
Occupation: Senior Officials and Managers	400	0.120	0.325	0	1	504	0.042	0.200	0	1	771	0.089	0.286	0	1	818	0.059	0.235	0	1	834	0.158	0.365	0	1	386	0.005	0.072	0	1
Occupation: Professionals	400	0.178	0.383	0	1	504	0.103	0.304	0	1	771	0.235	0.424	0	1	818	0.169	0.375	0	1	834	0.161	0.367	0	1	386	0.166	0.372	0	1
Occupation: Technicians	400	0.133	0.339	0	1	504	0.135	0.342	0	1	771	0.174	0.379	0	1	818	0.249	0.433	0	1	834	0.150	0.357	0	1	386	0.093	0.291	0	1
Occupation: Workers	400	0.478	0.500	0	1	504	0.597	0.491	0	1	771	0.428	0.495	0	1	818	0.414	0.493	0	1	834	0.440	0.497	0	1	386	0.560	0.497	0	1
Occupation: Elementary	400	0.093	0.290	0	1	504	0.123	0.329	0	1	771	0.074	0.262	0	1	818	0.109	0.312	0	1	834	0.091	0.288	0	1	386	0.176	0.381	0	1
Contract duration: no contract	400	0.025	0.156	0	1	504	0.062	0.240	0	1	771	0.003	0.051	0	1	818	0.042	0.200	0	1	834	0.107	0.309	0	1	386	0.013	0.113	0	1
Contract duration: limited	400	0.118	0.322	0	1	504	0.250	0.433	0	1	771	0.154	0.362	0	1	818	0.110	0.313	0	1	834	0.112	0.315	0	1	386	0.119	0.324	0	1
Contract duration : unlimited	400	0.858	0.350	0	1	504	0.688	0.464	0	1	771	0.843	0.364	0	1	818	0.848	0.359	0	1	834	0.782	0.413	0	1	386	0.868	0.339	0	1
Probability to lose job next 12 months: very likely	400	0.045	0.208	0	1	504	0.040	0.195	0	1	771	0.048	0.214	0	1	818	0.048	0.213	0	1	834	0.044	0.206	0	1	386	0.052	0.222	0	1
Probability to lose job next 12 months: likely	400	0.125	0.331	0	1	504	0.093	0.291	0	1	771	0.062	0.242	0	1	818	0.110	0.313	0	1	834	0.062	0.242	0	1	386	0.153	0.360	0	1
Probability to lose job next 12 months: not very likely	400	0.508	0.501	0	1	504	0.373	0.484	0	1	771	0.348	0.477	0	1	818	0.279	0.449	0	1	834	0.392	0.489	0	1	386	0.575	0.495	0	1
Probability to lose job next 12 months: not at all likely	400	0.323	0.468	0	1	504	0.494	0.500	0	1	771	0.542	0.499	0	1	818	0.564	0.496	0	1	834	0.501	0.500	0	1	386	0.220	0.415	0	1
Size establishment: under 10	400	0.243	0.429	0	1	504	0.353	0.478	0	1	771	0.256	0.436	0	1	818	0.220	0.415	0	1	834	0.164	0.371	0	1	386	0.187	0.390	0	1
Size establishment: 10 to 24	400	0.258	0.438	0	1	504	0.228	0.420	0	1	771	0.220	0.415	0	1	818	0.131	0.337	0	1	834	0.169	0.375	0	1	386	0.171	0.377	0	1
Size establishment: 25 to 99	400	0.293	0.455	0	1	504	0.216	0.412	0	1	771	0.281	0.450	0	1	818	0.226	0.419	0	1	834	0.228	0.420	0	1	386	0.308	0.462	0	1
Size establishment: 100 to 499	400	0.108	0.310	0	1	504	0.119	0.324	0	1	771	0.154	0.362	0	1	818	0.216	0.412	0	1	834	0.213	0.410	0	1	386	0.168	0.375	0	1
Size establishment: 500 or more	400	0.100	0.300	0	1	504	0.083	0.277	0	1	771	0.088	0.284	0	1	818	0.207	0.405	0	1	834	0.225	0.418	0	1	386	0.166	0.372	0	1
Sector of activity: Agriculture, hunting, forestry and fishing	400	0.045	0.208	0	1	504	0.022	0.146	0	1	771	0.016	0.124	0	1	818	0.015	0.120	0	1	834	0.004	0.060	0	1	386	0.044	0.205	0	1
Sector of activity: Industry	400	0.348	0.477	0	1	504	0.270	0.444	0	1	771	0.254	0.436	0	1	818	0.244	0.430	0	1	834	0.188	0.391	0	1	386	0.326	0.470	0	1
Sector of activity: Services	400	0.300	0.459	0	1	504	0.377	0.485	0	1	771	0.380	0.486	0	1	818	0.335	0.472	0	1	834	0.381	0.486	0	1	386	0.272	0.446	0	1
Sector of activity: Public administration and defence	400	0.043	0.202	0	1	504	0.151	0.358	0	1	771	0.047	0.211	0	1	818	0.094	0.292	0	1	834	0.118	0.322	0	1	386	0.075	0.264	0	1
Sector of activity: Other activities	400	0.265	0.442	0	1	504	0.181	0.385	0	1	771	0.304	0.460	0	1	818	0.312	0.463	0	1	834	0.309	0.463	0	1	386	0.282	0.451	0	1
Hours worked	400	42.648	9.194	6	80	504	41.145	9.802	6	72	771	39.654	7.782	0	80	818	37.495	10.130	0	80	834	39.155	12.359	0	80	386	43.492	9.491	0	80
Hours worked2	400	1903.122	791.539	36	6400	504	1788.796	783.763	36	5184	771	1632.899	622.108	0	6400	818	1508.373	782.177	0	6400	834	1685.656	944.214	0	6400	386	1981.425	864.136	0	6400
Self Employed	400	0.005	0.071	0	1	504	0.016	0.125	0	1	771	0.017	0.129	0	1	818	0.004	0.060	0	1	834	0.019	0.137	0	1	386	0.008	0.088	0	1
Supervisory tasks: number of people supervised	400	5.693	30.471	0	544	504	2.841	12.324	0	200	771	2.695	10.063	0	150	818	6.685	35.006	0	600	834	7.127	23.244	0	280	386	2.795	15.214	0	200
Autonomy	400	5.710	3.328	0	10	504	6.383	3.153	0	10	771	7.472	2.342	0	10	818	6.782	2.998	0	10	834	7.096	2.792	0	10	386	4.399	3.516	0	10
Influence in decisions	400	3.030	3.048	0	10	504	4.157	3.199	0	10	771	4.707	2.885	0	10	818	3.774	3.257	0	10	834	4.189	3.072	0	10	386	2.083	2.696	0	10
Opportunities to learn (attended course)	400	0.475	0.500	0	1	504	0.403	0.491	0	1	771	0.700	0.458	0	1	818	0.446	0.497	0	1	834	0.603	0.490	0	1	386	0.337	0.473	0	1
Years Education	400	13.423	2.745	5	20	504	13.798	4.583	0	20	771	14.227	3.424	4	20	818	13.501	3.572	0	20	834	14.483	3.337	0	20	386	13.181	3.249	4	20

ESS	NO					PL					PT					SE					SI					SK				
Variable Name	Obs	Mean	Std. Dev.	Min	Max	Obs	Mean	Std. Dev.	Min	Max	Obs	Mean	Std. Dev.	Min	Max	Obs	Mean	Std. Dev.	Min	Max	Obs	Mean	Std. Dev.	Min	Max	Obs	Mean	Std. Dev.	Min	Max
Job Satisfaction	900	7.440	1.748	0	10	459	6.810	2.174	0	10	364	6.898	1.662	0	10	966	7.353	1.830	0	10	378	7.267	1.935	0	10	356	6.747	2.027	0	10
Occupation: Senior Officials and Managers	900	0.063	0.244	0	1	459	0.098	0.298	0	1	364	0.016	0.128	0	1	966	0.073	0.261	0	1	378	0.082	0.275	0	1	356	0.065	0.246	0	1
Occupation: Professionals	900	0.157	0.364	0	1	459	0.139	0.347	0	1	364	0.085	0.280	0	1	966	0.219	0.414	0	1	378	0.185	0.389	0	1	356	0.149	0.356	0	1
Occupation: Technicians	900	0.307	0.461	0	1	459	0.137	0.344	0	1	364	0.104	0.306	0	1	966	0.222	0.415	0	1	378	0.169	0.376	0	1	356	0.171	0.377	0	1
Occupation: Workers	900	0.440	0.497	0	1	459	0.492	0.500	0	1	364	0.654	0.476	0	1	966	0.448	0.498	0	1	378	0.516	0.500	0	1	356	0.508	0.501	0	1
Occupation: Elementary	900	0.033	0.180	0	1	459	0.133	0.340	0	1	364	0.140	0.348	0	1	966	0.037	0.190	0	1	378	0.048	0.213	0	1	356	0.107	0.309	0	1
Contract duration: no contract	900	0.059	0.236	0	1	459	0.039	0.194	0	1	364	0.093	0.291	0	1	966	0.006	0.079	0	1	378	0.026	0.161	0	1	356	0.020	0.139	0	1
Contract duration: limited	900	0.090	0.286	0	1	459	0.290	0.454	0	1	364	0.187	0.390	0	1	966	0.120	0.325	0	1	378	0.148	0.356	0	1	356	0.177	0.382	0	1
Contract duration : unlimited	900	0.851	0.356	0	1	459	0.671	0.470	0	1	364	0.720	0.450	0	1	966	0.874	0.332	0	1	378	0.825	0.380	0	1	356	0.803	0.398	0	1
Probability to lose job next 12 months: very likely	900	0.012	0.110	0	1	459	0.083	0.276	0	1	364	0.016	0.128	0	1	966	0.042	0.202	0	1	378	0.042	0.202	0	1	356	0.042	0.201	0	1
Probability to lose job next 12 months: likely	900	0.038	0.191	0	1	459	0.227	0.419	0	1	364	0.143	0.350	0	1	966	0.052	0.222	0	1	378	0.116	0.321	0	1	356	0.233	0.423	0	1
Probability to lose job next 12 months: not very likely	900	0.232	0.422	0	1	459	0.477	0.500	0	1	364	0.442	0.497	0	1	966	0.262	0.440	0	1	378	0.495	0.501	0	1	356	0.486	0.501	0	1
Probability to lose job next 12 months: not at all likely	900	0.718	0.450	0	1	459	0.214	0.410	0	1	364	0.398	0.490	0	1	966	0.644	0.479	0	1	378	0.347	0.477	0	1	356	0.239	0.427	0	1
Size establishment: under 10	900	0.216	0.411	0	1	459	0.187	0.391	0	1	364	0.409	0.492	0	1	966	0.175	0.380	0	1	378	0.159	0.366	0	1	356	0.225	0.418	0	1
Size establishment: 10 to 24	900	0.206	0.404	0	1	459	0.135	0.342	0	1	364	0.239	0.427	0	1	966	0.195	0.396	0	1	378	0.116	0.321	0	1	356	0.258	0.438	0	1
Size establishment: 25 to 99	900	0.292	0.455	0	1	459	0.290	0.454	0	1	364	0.206	0.405	0	1	966	0.292	0.455	0	1	378	0.220	0.415	0	1	356	0.306	0.462	0	1
Size establishment: 100 to 499	900	0.167	0.373	0	1	459	0.235	0.425	0	1	364	0.085	0.280	0	1	966	0.177	0.382	0	1	378	0.228	0.420	0	1	356	0.129	0.336	0	1
Size establishment: 500 or more	900	0.120	0.325	0	1	459	0.153	0.360	0	1	364	0.060	0.239	0	1	966	0.161	0.368	0	1	378	0.278	0.448	0	1	356	0.081	0.274	0	1
Sector of activity: Agriculture, hunting, forestry and fishing	900	0.013	0.115	0	1	459	0.035	0.184	0	1	364	0.008	0.091	0	1	966	0.013	0.115	0	1	378	0.005	0.073	0	1	356	0.022	0.148	0	1
Sector of activity: Industry	900	0.226	0.418	0	1	459	0.388	0.488	0	1	364	0.330	0.471	0	1	966	0.230	0.421	0	1	378	0.378	0.486	0	1	356	0.407	0.492	0	1
Sector of activity: Services	900	0.311	0.463	0	1	459	0.318	0.466	0	1	364	0.313	0.464	0	1	966	0.336	0.473	0	1	378	0.386	0.488	0	1	356	0.222	0.416	0	1
Sector of activity: Public administration and defence	900	0.069	0.253	0	1	459	0.074	0.262	0	1	364	0.069	0.253	0	1	966	0.061	0.240	0	1	378	0.058	0.234	0	1	356	0.073	0.261	0	1
Sector of activity: Other activities	900	0.381	0.486	0	1	459	0.185	0.389	0	1	364	0.280	0.450	0	1	966	0.359	0.480	0	1	378	0.172	0.378	0	1	356	0.275	0.447	0	1
Hours worked	900	38.960	9.064	4	80	459	43.331	10.927	7	80	364	32.624	15.798	0	60	966	39.507	8.307	1	70	378	45.056	9.104	0	80	356	41.007	15.528	0	80
Hours worked2	900	1599.949	722.467	16	6400	459	1996.730	987.783	49	6400	364	1313.190	806.236	0	3600	966	1629.749	635.918	1	4900	378	2112.675	840.304	0	6400	356	1922.025	1120.514	0	6400
Self Employed	900	0.003	0.058	0	1	459	0.007	0.081	0	1	364	0.000	0.000	0	0	966	0.003	0.056	0	1	378	0.034	0.182	0	1	356	0.006	0.075	0	1
Supervisory tasks: number of people supervised	900	4.946	20.286	0	330	459	2.843	9.702	0	100	364	1.813	7.511	0	100	966	8.314	61.895	0	1600	378	6.794	28.249	0	400	356	3.478	16.533	0	250
Autonomy	900	7.428	2.436	0	10	459	4.908	3.494	0	10	364	5.854	2.843	0	10	966	7.547	2.382	0	10	378	6.780	3.058	0	10	356	4.466	3.419	0	10
Influence in decisions	900	5.559	2.805	0	10	459	2.571	2.896	0	10	364	3.975	2.913	0	10	966	4.630	2.958	0	10	378	3.669	3.176	0	10	356	2.433	2.795	0	10
Opportunities to learn (attended course)	900	0.646	0.479	0	1	459	0.383	0.487	0	1	364	0.187	0.390	0	1	966	0.722	0.448	0	1	378	0.534	0.499	0	1	356	0.444	0.498	0	1
Years Education	900	14.419	3.224	0	20	459	13.185	2.884	7	20	364	9.124	4.573	0	20	966	13.610	3.041	3	20	378	13.034	3.332	2	20	356	13.171	2.902	1	20

Table A 3: Results, ESS sample

VARIABLES	(1) MODEL 1	(2) MODEL 2	(3) MODEL 3	(4) MODEL 4
Senior Official/ Manager	1.03***	0.97***	0.86***	0.39***
	(0.10)	(0.11)	(0.11)	(0.11)
Professional	0.92***	0.94***	0.79***	0.51***
	(0.09)	(0.10)	(0.10)	(0.10)
Technician	0.66***	0.67***	0.60***	0.35***
	(0.09)	(0.10)	(0.09)	(0.10)
Worker	0.49***	0.49***	0.49***	0.40***
	(0.09)	(0.09)	(0.09)	(0.09)
Citizen		-0.01	-0.05	-0.09
		(0.11)	(0.11)	(0.11)
Minority group		-0.05	0.01	0.08
		(0.11)	(0.10)	(0.10)
Age		-0.05***	-0.04***	-0.06***
		(0.01)	(0.01)	(0.01)
Age2		0.00***	0.00***	0.00***
		(0.00)	(0.00)	(0.00)
Gender		0.01	0.04	0.02
		(0.04)	(0.04)	(0.04)
Education		-0.02***	-0.02***	-0.03***
		(0.01)	(0.01)	(0.01)
Health		0.55***	0.46***	0.45***
		(0.05)	(0.05)	(0.05)
Married		0.02	0.01	0.02
		(0.05)	(0.05)	(0.05)
Children at home		0.09	0.07	0.06
		(0.06)	(0.06)	(0.06)
Household size		0.00	-0.01	-0.00
		(0.02)	(0.02)	(0.02)
Partner works		0.03	0.03	0.00
		(0.07)	(0.07)	(0.07)
HH Income €150 to <€300		0.01	0.05	0.12
		(0.42)	(0.40)	(0.39)
HH Income €300 to < €500		-0.38	-0.31	-0.19
		(0.39)	(0.38)	(0.37)
HH Income €500 to < €1000		-0.25	-0.25	-0.10
		(0.38)	(0.37)	(0.36)
HH Income €1000 to <€1500		0.02	0.04	0.15
		(0.38)	(0.37)	(0.36)
HH Income €1500 to <€2000		0.03	0.01	0.06
		(0.38)	(0.37)	(0.36)
HH Income €2000 to < €2500		0.15	0.09	0.15
		(0.38)	(0.37)	(0.36)
HH Income €2500 to < €3000		0.14	0.08	0.13
		(0.38)	(0.37)	(0.35)
HH Income €3000 to <€5000		0.10	0.04	0.06
		(0.38)	(0.36)	(0.35)
HH Income €5000 to <€7500		0.19	0.11	0.09
		(0.38)	(0.37)	(0.35)
HH Income €7500 to <€10000		0.36	0.26	0.26
		(0.39)	(0.37)	(0.36)
HH Income €10000 or more		0.41	0.29	0.27
		(0.40)	(0.38)	(0.37)
Contract limited duration			-0.06	0.05
			(0.11)	(0.11)
Contract unlimited duration			-0.13	-0.10
			(0.09)	(0.09)
Job security low			0.14	0.11
			(0.15)	(0.15)
Job security medium			0.97***	0.87***
			(0.14)	(0.14)
Job security high			1.43***	1.27***
			(0.14)	(0.14)
Small enterprise			0.05	0.11**
			(0.06)	(0.06)
Medium enterprise			0.02	0.11**
			(0.06)	(0.06)
Large enterprise			-0.11*	0.01
			(0.06)	(0.06)
Very large enterprise			0.01	0.14**
			(0.07)	(0.07)
Industry			-0.08	-0.03
			(0.13)	(0.13)
Services			-0.14	-0.14
			(0.13)	(0.13)
Public Administration			-0.01	-0.02
			(0.15)	(0.15)
Other Services			0.10	0.06
			(0.14)	(0.14)
Hours worked			-0.02**	-0.01**
			(0.01)	(0.01)
Hours worked2			0.00***	0.00*
			(0.00)	(0.00)
Self employed			0.34**	-0.01
			(0.16)	(0.16)
Supervisory				0.00
				(0.00)
Autonomy				0.08***
				(0.01)
Influence				0.07***
				(0.01)
Opportunities to learn				0.12***
				(0.04)
Constant	6.87***	7.24***	6.73***	6.49***
	(0.11)	(0.51)	(0.55)	(0.55)
Observations	10420	10420	10420	10420
R-squared	0.05	0.07	0.11	0.15

Robust standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1

Table A 4: Estimation by ordered probit, marginal effects, ESS, all models

MARGINAL EFFECTS
associated with each occupational dummy
(ESS, MODEL 1)

	Job satisfaction										
	0	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**
Officials, Managers, Professionals	-0.007	-0.006	-0.013	-0.018	-0.018	-0.040	-0.034	-0.037	0.024	0.065	0.085
Std error	*(0.001)*	*(0.001)*	*(0.001)*	*(0.002)*	*(0.002)*	*(0.004)*	*(0.003)*	*(0.004)*	*(0.002)*	*(0.006)*	*(0.009)*
Technicians	-0.005	-0.004	-0.009	-0.012	-0.012	-0.027	-0.023	-0.023	0.018	0.044	0.054
Std error	*(0.001)*	*(0.001)*	*(0.001)*	*(0.002)*	*(0.002)*	*(0.004)*	*(0.003)*	*(0.004)*	*(0.002)*	*(0.006)*	*(0.009)*
Workers	-0.004	-0.004	-0.008	-0.010	-0.010	-0.021	-0.017	-0.015	0.018	0.034	0.037
Std error	*(0.001)*	*(0.001)*	*(0.001)*	*(0.002)*	*(0.002)*	*(0.004)*	*(0.003)*	*(0.003)*	*(0.003)*	*(0.006)*	*(0.007)*

MARGINAL EFFECTS
associated with each occupational dummy
(ESS, MODEL 2)

	Job satisfaction										
	0	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**
Officials, Managers, Professionals	-0.006	-0.006	-0.014	-0.019	-0.019	-0.043	-0.037	-0.040	0.025	0.070	0.089
Std error	*(0.001)*	*(0.001)*	*(0.001)*	*(0.002)*	*(0.002)*	*(0.004)*	*(0.004)*	*(0.005)*	*(0.002)*	*(0.007)*	*(0.010)*
Technicians	-0.004	-0.004	-0.009	-0.013	-0.013	-0.029	-0.025	-0.026	0.019	0.047	0.058
Std error	*(0.001)*	*(0.001)*	*(0.001)*	*(0.002)*	*(0.002)*	*(0.004)*	*(0.004)*	*(0.004)*	*(0.002)*	*(0.007)*	*(0.009)*
Workers	-0.004	-0.004	-0.008	-0.011	-0.010	-0.023	-0.018	-0.016	0.020	0.036	0.039
Std error	*(0.001)*	*(0.001)*	*(0.001)*	*(0.002)*	*(0.002)*	*(0.004)*	*(0.003)*	*(0.003)*	*(0.003)*	*(0.006)*	*(0.007)*

MARGINAL EFFECTS
associated with each occupational dummy
(ESS, MODEL 3)

	Job satisfaction										
	0	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**
Officials, Managers, Professionals	-0.005	-0.005	-0.012	-0.016	-0.017	-0.039	-0.034	-0.036	0.026	0.064	0.075
Std error	*(0.001)*	*(0.001)*	*(0.001)*	*(0.002)*	*(0.002)*	*(0.004)*	*(0.004)*	*(0.005)*	*(0.002)*	*(0.007)*	*(0.010)*
Professionals	-0.003	-0.004	-0.008	-0.012	-0.012	-0.028	-0.024	-0.025	0.019	0.045	0.052
Std error	*(0.001)*	*(0.001)*	*(0.001)*	*(0.002)*	*(0.002)*	*(0.004)*	*(0.004)*	*(0.005)*	*(0.002)*	*(0.007)*	*(0.009)*
Workers	-0.004	-0.004	-0.008	-0.011	-0.011	-0.024	-0.019	-0.018	0.021	0.038	0.038
Std error	*(0.001)*	*(0.001)*	*(0.001)*	*(0.002)*	*(0.002)*	*(0.004)*	*(0.003)*	*(0.003)*	*(0.003)*	*(0.006)*	*(0.006)*

MARGINAL EFFECTS
associated with each occupational dummy
(ESS, MODEL 4)

	Job satisfaction										
	0	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**
Officials, Managers, Professionals	-0.003	-0.003	-0.007	-0.010	-0.010	-0.024	-0.020	-0.021	0.019	0.039	0.039
Std error	*(0.001)*	*(0.001)*	*(0.001)*	*(0.002)*	*(0.002)*	*(0.005)*	*(0.004)*	*(0.005)*	*(0.003)*	*(0.008)*	*(0.009)*
Technicians	-0.002	-0.002	-0.005	-0.007	-0.008	-0.017	-0.015	-0.015	0.014	0.028	0.028
Std error	*(0.001)*	*(0.001)*	*(0.001)*	*(0.002)*	*(0.002)*	*(0.004)*	*(0.004)*	*(0.004)*	*(0.003)*	*(0.007)*	*(0.008)*
Workers	-0.003	-0.003	-0.007	-0.009	-0.010	-0.022	-0.018	-0.017	0.020	0.035	0.033
Std error	*(0.001)*	*(0.001)*	*(0.001)*	*(0.002)*	*(0.002)*	*(0.004)*	*(0.003)*	*(0.003)*	*(0.004)*	*(0.006)*	*(0.006)*

Table A 5: Controlling for the endogeneity of the occupational choice. Second stage equation estimated by ordered probit. Marginal effects associated with all levels of job satisfaction (ESS, model 4)

ESS model 4 MARGINAL EFFECTS
associated with each occupational dummy, after controlling for potential endogeneity of the occupational choice

	Job satisfaction										
	0	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**
Officials, Managers, Professionals	-0.003	-0.003	-0.008	-0.011	-0.012	-0.027	-0.024	-0.025	0.021	0.046	0.047
	(0.001)	*(0.001)*	*(0.003)*	*(0.004)*	*(0.005)*	*(0.011)*	*(0.010)*	*(0.012)*	*(0.007)*	*(0.019)*	*(0.022)*
Technicians	-0.002	-0.002	-0.005	-0.007	-0.007	-0.017	-0.015	-0.015	0.014	0.029	0.028
	(0.001)	*(0.001)*	*(0.002)*	*(0.003)*	*(0.003)*	*(0.008)*	*(0.007)*	*(0.008)*	*(0.005)*	*(0.014)*	*(0.015)*
Workers	-0.002	-0.003	-0.006	-0.008	-0.008	-0.019	-0.016	-0.015	0.017	0.031	0.029
	(0.001)	*(0.001)*	*(0.002)*	*(0.002)*	*(0.002)*	*(0.005)*	*(0.005)*	*(0.004)*	*(0.005)*	*(0.009)*	*(0.008)*

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Abstract
This paper studies the determinants of differences in self reported job satisfaction across occupations using data from the 2006/2007 European Social Survey (18 countries). When the effect of other variables is not accounted for, being a Manager yields a "satisfaction bonus" two times as big as the one provided by Workers positions. This substantial satisfaction gap between those holding Managerial positions and Workers practically disappears when we control for individual, household and work related variables. Even though the differences across occupations are reduced, all occupations bring about more job satisfaction than manual and service positions. All results hold when using the European Working Conditions Survey data set. In addition, the results are robust to the use of job satisfaction as a categorical variable and to a variation of the model specification that takes into account the potential endogeneity of the occupational choice.

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